

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below. A listing of all pending claims is presented below.

1. (Amended) A gain control circuit comprising:

a variable gain circuit having a predetermined gain control range; and

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a control voltage supply circuit for supplying an internal control voltage to said variable gain circuit as a gain control signal, wherein

said control voltage supply circuit generates said internal control voltage in response to an external control voltage so as to compensate the linearity of said variable gain circuit to an extent of the external control voltage where said variable gain circuit loses a linearity, wherein

said control voltage supply circuit generates said internal control voltage varying linearly as against said external control voltage in voltage ranges from a first reference voltage to a second reference voltage, and

a changing ratio of said internal control voltage is set to be larger than a changing ratio of at least in the voltage range that is less than the first reference voltage and the voltage range that is greater than the second reference voltage.

2. (Canceled)

3. (Original) The gain control circuit as claimed in Claim 1, wherein
more than one of said variable gain circuits are connected in cascade connection.

4. (Amended) A radio communication apparatus having an amplification means
in a transmitting stage for amplifying an intermediate frequency signal and [supply] supplying
said intermediate frequency signal to a mixing circuit, in which

said amplification means [comprising] comprises :
a variable gain circuit having a predetermined gain control range; and
a control voltage supply circuit for supplying an internal control voltage to said
variable gain circuit as a gain control signal, wherein

said control voltage supply circuit generates said internal control voltage in
response to an external control voltage so as to compensate a linearity of said variable gain
circuit to an [extend] extent of the external control voltage where said variable gain circuit loses
a linearity, wherein

the control voltage circuit generates the internal control voltage varying linearly
as against the external control voltage in voltage ranges from a first reference voltage to the
second reference voltage, and

a changing ratio of said internal control voltage is set to be larger than a changing
ratio of at least in the voltage range that is less than the first reference voltage and the voltage
range that is greater than the second reference voltage.

5. (Canceled)

6. (Original) The radio communication apparatus as claimed in Claim 4, wherein more than one of said variable gain circuits are connected in cascade connection.

✓ 7. (Newly-added) A gain control circuit comprising:

a variable gain circuit having a predetermined gain control range; and
a control voltage supply circuit for supplying an internal control voltage to said variable gain circuit as a gain control signal, wherein

said control voltage supply circuit generates said internal control voltage in response to an external control voltage as to compensate the linearity of said variable gain circuit to an extent of the external control voltage where said variable gain circuit loses a linearity, said control voltage supply circuit includes at least two threshold voltages and converts said external control voltage to a compensated output control voltage for generating a compensating voltage greater than or less than each of the two threshold voltages, respectively, and does not compensate the control voltage between said two threshold voltages.

8. (Newly-added) The gain control circuit as claimed in Claim 7, wherein said control voltage supply circuit generates said internal control voltage varying in linearity as against said external control voltage in voltage ranges from a first reference voltage to a second reference voltage that respectively correspond to said first and second threshold voltages, and

a changing ratio of said internal control voltage is set to be larger than a changing ratio of at least in the voltage range that is less than the first reference voltage and the voltage range that is greater than the second reference voltage.

9. (Newly-added) The gain control circuit as claimed in Claim 7, wherein more than one of said variable gain circuits are connected in cascade connection.

10. (Newly-added) A gain control circuit comprising:
a variable gain circuit having a predetermined gain control range; and
a control voltage supply circuit for supplying an internal control voltage to said variable gain circuit as a gain control signal, wherein
said control voltage supply circuit including at least two threshold voltages and a current switch for generating compensating currents to generate the compensating control voltage at an output terminal in order to supply a larger or smaller voltage to an ideal control voltage line.

11. (Newly-added) A gain control circuit as set forth in claim 10, wherein said control voltage supply circuit further includes at least two buffer circuits in which an output terminal of said second buffer circuit is connected to an emitter of a transistor having an output voltage that can be varied with compensating current from output transistors.

12. (Newly-added) A gain control circuit as set forth in claim 7, wherein said control voltage supply circuit further includes at least two buffer circuits in which an output terminal of said second buffer circuit is connected to an emitter of a transistor having an output voltage that can be varied with compensating current from output transistors.

(b)